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## PATENT ABSTRACTS OF JAPAN

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(57) Abstract:

**PURPOSE:** To prevent the vibration of a rotary shaft accompanying the rotation of a disklike magnet so as to reduce noise by arranging a vibrationproof spring, which energizes the rotary shaft in the radial direction, inside a shaft hole.

**CONSTITUTION:** Continuous unevenness is formed in circumferential direction on the surface of a pole plate 25, and the projection functions as a pole piece 21a. A shaft hole 23a is bored in an iron core 23, and bearings 26 for holding a rotary shaft 11 freely in rotation are installed at both ends of the shaft hole 3a. A vibrationproof spring 27 consisting of a coil spring is held between both bearings 26, in such shape that the rotary shaft 11 is set therein. By making this vibrationproof spring 27 act radially on the rotary shaft 11, the rotary shaft 11 can be loaded in advance even if it is in unload condition, so the vibration of the rotary shaft 11 can be suppressed. Hereby, noise can also be reduced.

